

GAIN FLATTENED BI-DIRECTIONALLY PUMPED RAMAN  
AMPLIFIER FOR WDM TRANSMISSION SYSTEMS

**Abstract of the Disclosure**

5 Raman amplification of a WDM signal with excellent gain flatness across a very  
large bandwidth is achieved. Co-propagating and counter-propagating Raman pumping  
are combined in the same fiber. Multiple pumping wavelengths are employed.  
Wavelengths employed for co-propagating pumping and wavelengths employed for  
counter-propagating pumping alternate in order of wavelength. In one embodiment, N  
10 co-propagating pump wavelengths and N+1 counter-propagating pump wavelengths are  
used. Alternatively, one may use N+1 co-propagating pump wavelengths and N counter-  
propagating pump wavelengths.

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